REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1 and 3-6 are active in the application. These claims are rejected on the same art that was applied in the previous Official Action but the Final Rejection includes additional comments and observations from the examiner. As before, applicants disagree with many of the assertions made by the examiner and believe that the claims of this application are indeed patentable. With regard to the second rejection, applicants wish to point out that the assignees of the present application are also the assignees of the reference applied in this section thus they are well familiar with the content of the applied reference.

Applicants respond to the two issues raised in the outstanding Official Action as follows:

Response to Obviousness Rejection

As to Claims 5 and 6, applicants do not understand why the claimed invention is obvious over Okada et al and Takebayashi et al in view of Nisogi et al, Makihara et al, Okomori et al and Nisogi et al. Claims 5 and 6 include the technical feature of the web after drying and before rewetting having a sheet gloss of 70% or more, whereas none of Okada et al, Takebayashi et al, Nisogi et al, Makihara et al, Okomori et al and Nisogi et al describes this technical feature. Thus, a skilled person cannot arrive at Claims 5 and 6 by combining Okada et al and Takebayashi et al and Nisogi et al, Makihara et al, Okomori et al and Nisogi et al.

In this regard, the Examiner states in the Office Action as follows:
"only claim 6 explicitly recites the gloss of the web, yet as explained before, the primary references show this property" (page 3, lines 4-5 from the bottom).

This is not correct: Okada et al and Takebayashi et al do not describe the sheet gloss of the web after drying and before rewetting at all. The sheet gloss in the references is measured at a different stage of the processing.

In more detail, Okada et al describes rewet casting method in [0022] and provides some working examples (Examples 5-8 and Comparative Examples 4-6, Table 2), but does not disclose the gloss of the web after drying and before rewetting. Okada et al only describes in Table 2 that the **finished product** has a sheet gloss of 91-96%, which is not a sheet gloss of the web after drying and before rewetting.

The same applies to Takebayashi et al. Takebayashi et al describes a rewet casting method in Examples 8-14 and Comparative Examples 3-4, but does not disclose the gloss of the web after drying and before rewetting. Takebayashi et al describes in Table 2 that the **finished product** has a sheet gloss of 89-95%. Accordingly, Claims 5 and 6 are not obvious over Okada et al and Takebayashi et al in view of Nisogi et al, Makihara et al, Okomori et al and Nisogi et al.

As applicants previously pointed out, JP H09-31891 A (Okada et al) describes a process for preparing a cast-coated paper using hollow plastic pigment particles with not less than 45% voids and a kaolin. Okada et al states that 2-20 parts by weight of a hollow plastic pigment with not less than 45% voids is added to improve sheet gloss and to obtain a fine ink set quality. The kaolin disclosed in Okada et al is not "a kaolin having a particle size distribution such that not less than 65% by volume of the particles are in the range of 0.4-4.2 μm", a particular particle size as required by the claims of the present invention. Especially, the Examples in Okada et al only describe Ultra White 90 (trade name), which corresponds to Comparative Example 2 in the subject application. It is obvious from Table 2 in the subject application that there is a significant difference in effects between the present invention and Comparative Example 2. Specifically, Comparative Example 2 is inferior in sheet gloss before rewetting, image clarity, which is cast uniformity, print gloss and cast coating runnability. Furthermore, Okada et al does not describe adding to the base paper a compound having the effect of inhibiting interfiber bonding.

Okada et al is different from the present invention in that while Okada et al uses a plastic pigment to improve the ink drying nature and cast coating runnability, Okada et al use common kaolin having a wide particle size distribution, the size of which is not specified.

On the other hand, in the present invention, the combination of the carefully specified kaolin having a narrow particle size distribution such that not less than 65% by volume of the particles are in the range of 0.4-4.2 μm in combination with the plastic pigment reduces the packing density of pigment particles in the coating layer, improves the covering power on the base paper, and facilitates transfer of the image of the mirror surface onto the coating layer surface by mirror finishing. As a result, sheet gloss improves and print gloss also appears to improve because the vehicles contained in printing inks are less likely to be absorbed. Moreover, print gloss becomes higher than sheet gloss presumably because the plastic pigment further facilitates transfer of the image of the mirror surface by the heat of the mirror finishing surface.

Further, sheet gloss, print gloss and cast-coated surface quality are improved by use of an organic compound having the effects of inhibiting interfiber bonding of pulp in the base paper. Okada et al does not describe good cast-coated surface quality (image clarity) and print gloss rather than sheet gloss, which are the effects of the present invention.

The invention described in JP H10-18197 A (Takebayashi et al) relates to a cast-coated paper comprising a kaolin having a particular particle size distribution. Takebayashi et al states that 30 to 100% by weight of a kaolin having a particular particle size distribution is added to a coating layer for casting to obtain excellent sheet gloss and printability. However, though the particle size distribution of kaolin overlaps with that of the kaolin of the subject application, Takebayashi et al is silent as to the presence of a plastic pigment. Further, Takebayashi et al does not describe adding to a base paper a compound having the effect of inhibiting interfiber bonding. Takebayashi et al is also silent on cast-coated surface quality (image clarity), which is a characteristic of the present invention.

The object and effect of the invention described in Takebayashi et al. are the same as those of the present invention, i.e., to improve sheet gloss and print gloss; however, since no plastic pigment is present, and no organic compound having the effects of inhibiting interfiber bonding of pulp are present in the base paper, it will quickly be apparent that the invention of Takebayashi et al is clearly inferior in cast-coated surface quality (image clarity).

Takebayashi et al describes a kaolin having a particle size distribution overlapping with that of the kaolin of the subject application. In Okada et al, a plastic pigment as also used in the present invention is added. In the two patents, no organic compound having the effects of inhibiting interfiber bonding of pulp is included in the base paper. The present invention organically combines a kaolin having a particular particle size distribution with a plastic pigment and an organic compound having the effects of inhibiting interfiber bonding of pulp to produce an effect greater than the effect of the kaolin and the effect of the plastic pigment. Specifically, the present invention produces a cast-coated paper with good cast-coated surface quality (image clarity), high sheet gloss, higher print gloss than sheet gloss, and good printability.

On the other hand, while it is true that Okada et al describes that the resulting cast-coated paper has excellent sheet gloss, printability and coating runnability, and can be produced at high efficiency ([0058]), and Takebayashi et al describes that the resulting cast-coated paper is

significantly excellent in printability such as sheet gloss, print gloss and ink drying nature, and is high in productivity ([0067]) both Okada et al and Takebayashi et al are silent on cast-coated surface quality (image clarity).

Accordingly, applicants consider that the high image clarity, which is an effect of the present invention, is achieved by a synergy of the following features: not less than 50 parts by weight of a kaolin based on 100 parts by weight of inorganic pigments is present, and the kaolin has a particle size distribution such that not less than 65% by volume of the particles are in the range of 0.4-4.2 μm (Feature 1 of the present invention); a plastic pigment is also used (Feature 2 of the present invention); and an organic compound having the effects of inhibiting interfiber bonding of pulp is contained in a base paper (Feature 3 of the present invention). The present invention was completed by the finding that the combination of Feature 1, Feature 2 and Feature 3 produces high image clarity, which is a new and unexpected effect. Specifically, the present invention (as defined in amended Claim 1) produces an effect equal to the effect of Okada et al plus the effect of Takebayashi et al -- plus an extra effect; therefore, it would not have been obvious for a person skilled in the art to envision the present invention by combining Okada et al with Takebayashi et al.

WO 02/0100 (Nisogi et al) states that not less than 50 parts by weight of a kaolin based on 100 parts by weight of inorganic pigments is present, and that the kaolin has a particle size distribution such that not less than 65% by volume of the particles is in the range of 0.4-4.2 μm. Nisogi et al also describes the use of a softener having the effect of inhibiting interfiber bonding of the pulp. However, the invention described in WO 02/0100 is a coated paper for printing. In the Examples of WO 02/0100, sheet gloss is less than 70% measured based on JIS P8142, Incident Angle: 75°, which is clearly low and is thus different from the cast-coated paper of the present invention having high sheet gloss.

The present invention differs from WO 03/56101 (Nisogi et al) in that claim 6 of the present invention is directed to a cast-coated paper having a sheet gloss of not less than 70% at 75° whereas WO 03/56101 is directed to a dull coated printing paper, the sheet gloss of which is less than 60% at 75°.

It is clear that in Okada et al and Takebayashi et al, a sheet gloss of a cast coated paper is more than 89% measured at an incidence angle of 75° based on JIS P8142, whereas in the

present invention a cast surface is measured at an incidence angle of 200 because of high sheet gloss. Further, WO 02/0100 describes no plastic pigment. The present specification describes:

"the combination of the kaolin having a narrow particle size distribution and the plastic pigment according to the present invention reduces the packing density of pigment particles in the coating layer, improves the covering power on the base paper, and facilitates transfer of the image of the mirror surface onto the coating layer surface by mirror finishing" (page 6, line 27 to page 7, line 6).

Specifically, since WO 02/0100 relates to a coated paper for printing and is thus not a cast-coated paper as in the present invention, it is unnecessary to use a combination of a kaolin having a narrow particle size distribution and a plastic pigment.

The invention described in JP 2003-171893 A (Makihara et al.) is a coated paper for printing containing a plastic pigment as a pigment (Claim 1). Makihara et al also describes adding to a base paper an organic compound having the effect of interfiber bonding of pulp (Claim 2 and elsewhere). Makihara et al further describes that not less than 50 parts by weight of a kaolin based on 100 parts by weight of inorganic pigments is contained as a pigment, and the kaolin has a particle size distribution such that not less than 65% by volume of the particles is in the range of 0.4-4.2 μm (Claim 4 and elsewhere). However, Makihara et al relates to a coated paper for printing and is thus different from a cast-coated paper as in the present invention. Accordingly, Makihara et al does not describe that a sheet gloss after drying and before rewetting is 70% or more.

JP 2000-345493 A (Okago et al) relates to a matte coated paper, which is not a cast-coated paper as in the present invention. Okago et al., while describing applying a coating layer comprising a pigment having a particle size distribution such that not less than 65% by volume of the pigment particles is in the range of 0.4-4.2 μm, does not describe that the base paper contains an organic compound having the effect of inhibiting interfiber bonding of pulp. Furthermore, Okago et al. does not describe that a sheet gloss after drying and before rewetting is 70% or more.

In the Office Action, the Examiner again denies the novelty and non-obviousness of the claimed invention. However, WO03/056101 does not describe cast coating technique at all. WO03/056101 lists many coating techniques such as size press coater, roll coater and blade

coater in [0049], which are suitable for the invention of WO03/056101. Please note that cast coating is excluded from the list of [0049] because cast coating cannot be used in the invention of WO03/056101. Clearly this reference "teaches away" from the applicants' claims.

Further, it will be quite apparent from the title of the invention of WO03/056101, DULLISH COATED PAPER FOR PRINTING, the coated paper of WO03/056101 is dullish and has a dullish surface where sheet gloss is low. Cast coating is a coating technique suitable for making a glossy coated paper, and not suitable for making a dullish one, a further "teaching away". Thus, coast coating is not listed in [0049] of WO03/056101. Please note that Nippon Paper Industries is the assignee for WO03/056101 as well as the present application (WO2005/038134), and knows the cited invention of WO03/056101 inside out.

Response to Anticipation/Obviousness Rejection

As applicants previously pointed out, the single reference Nisogi et al WO 03/056101 based upon its counterpart published US application 2005//0016701 used as a translation. This is different from the Nisogi et al '100 reference applied in the rejection discussed above.

Applicants' claims are patentable over each of the cited references since they each fail to disclose each element of applicants' claims.

To summarize, the features of amended Claim 1 are:

1. not less than 50 parts by weight of a kaolin based on 100 parts by weight of inorganic pigments is contained, and the kaolin has a particle size distribution is such that not less than 65% by volume of the particles are in a range of 0.4-4.2 μm;

2. a plastic pigment is present;

3. a compound having an effect of inhibiting interfiber bonding is included in the base paper; and

4. A cast-coated paper is obtained by applying a cast-coating process.

With the foregoing features, the present invention produces the following advantageous effects: good cast-coated surface quality (image clarity), especially appearance; high sheet gloss; higher print gloss than sheet gloss; and good productivity (runability).

Accordingly, the present invention using cast coating is novel and inventive over WO03/056101 which does not describe cast coating technique at all.

None of cited references disclose or suggest a compound having the effect of inhibiting

interfiber bonding contained in a base paper, and the advantageous effects of good cast-coated surface quality (image clarity). Accordingly, the present invention is not obvious from the inventions of the cited references.

Reconsideration and favorable action are solicited. Should the examiner require further information, please contact the undersigned.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 14-1140.

Respectfully submitted,

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